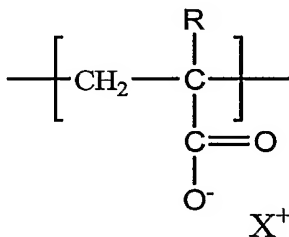


## CLAIMS

We claim:

1. A bimodal polymer composition, comprising a first polymer with anionic character and a second polymer with cationic character, wherein the polymers form an interpenetrating polymer network.
2. The bimodal polymer composition of Claim 1 wherein the first polymer has a molecular weight ranging from about 1,000 to about 100,000 daltons.
3. The bimodal polymer composition of Claim 1 wherein the second polymer has a molecular weight ranging from about 2,000 to about 1,000,000 daltons.
4. The bimodal polymer composition of Claim 1 wherein the first polymer includes the following carboxylate salt monomer unit:



wherein R is hydrogen or an alkyl group and  $\text{X}^+$  is a salt-forming cation.

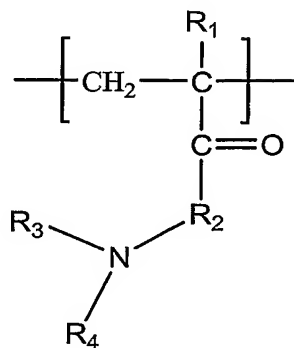
5. The bimodal polymer composition of Claim 4 wherein the first polymer contains at least about 10 weight percent of carboxylate salt monomer units.
6. The bimodal polymer composition of Claim 5 wherein the first polymer contains about 10 to about 20 weight percent carboxylate salt monomer units.

7. The bimodal polymer composition of Claim 6 wherein the first polymer contains about 12 to about 20 weight percent carboxylate salt monomer units.
8. The bimodal polymer composition of Claim 1 wherein the second polymer includes an ammonium derivative monomer unit.
- 5 9. The bimodal polymer composition of Claim 8 wherein the second polymer includes about 10 to about 90 weight percent ammonium derivative monomer unit.
10. The bimodal polymer composition of Claim 8 wherein the ammonium derivative monomer unit is selected from the group consisting of: dialkyl  
10 amino alkyl acrylates, dialkyl amino alkyl methacrylates, quaternized adducts of dialkyl amino alkyl acrylate, quaternized adducts of dialkyl amino alkyl methacrylate, methacrylamide and esters thereof, vinyl pyrrolidone, and vinyl caprolactam.
11. The bimodal polymer composition of Claim 10 wherein the ammonium  
15 derivative monomer unit is dimethylaminoethyl methacrylate or a quaternized adduct thereof.
12. The bimodal polymer composition of Claim 1 wherein the second polymer includes a water insoluble monomer unit.
- 20 13. The bimodal polymer composition of Claim 12 wherein the second polymer includes about 10 to about 90 weight percent water insoluble monomer unit.
14. The bimodal polymer composition of Claim 12 wherein the water insoluble monomer unit is selected from the group consisting of: esters of acrylate,  
25 esters of methacrylate, ethers of acrylate, ethers of methacrylate, styrene, and alpha-methyl styrene.

15. The bimodal polymer composition of Claim 14 wherein the water insoluble monomer unit is butyl methacrylate.
16. The bimodal polymer composition of Claim 1 wherein the second polymer includes a water soluble monomer unit selected from the group consisting of:  
5 hydroxy functional acrylates, hydroxy functional methacrylates, and alkoxylated adducts thereof.
17. The bimodal polymer composition of Claim 16 wherein the second polymer includes up to about 80 weight percent of the water soluble monomer unit.
- 10 18. The bimodal polymer composition of Claim 16 wherein the water soluble monomer unit is hydroxypropyl methacrylate.
19. The bimodal polymer composition of Claim 1 wherein the second polymer includes a cross-linking or multifunctional monomer unit.
- 15 20. The bimodal polymer composition of Claim 19 wherein the second polymer includes up to about 10 weight percent of the cross-linking or multifunctional monomer unit.
21. The bimodal polymer composition of Claim 19 wherein the cross-linking or multifunctional monomer unit is selected from the group consisting of  
20 multifunctional acrylates, multifunctional methacrylates and diallyl phthalate.
22. The bimodal polymer composition of Claim 1 wherein the second polymer includes a monomer unit of anionic functionality.
23. The bimodal polymer composition of Claim 22 wherein the monomer unit of anionic functionality is selected from the group consisting of: acrylic acid, methacrylic acid and esters thereof.  
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-30-

24. The bimodal polymer composition of Claim 1 wherein the second polymer includes the following cationic monomer unit:



- 5        or a quaternized adduct thereof,  
           wherein R<sub>1</sub>, R<sub>3</sub> and R<sub>4</sub> are, independently, hydrogen or an alkyl group and R<sub>2</sub>  
           is an alkyl group.
25.       The bimodal polymer composition of Claim 24 wherein the cationic  
           monomer unit includes diethylaminoethyl methacrylate or a quaternized  
 10       adduct thereof.
26.       The bimodal polymer composition of Claim 1 wherein the second polymer  
           contains at least about 10 weight percent cationic monomer units.
- 15    27.       The bimodal polymer composition of Claim 26 wherein the second polymer  
           contains about 10 to about 20 weight percent cationic monomer units.
28.       The bimodal polymer composition of Claim 27 wherein the second polymer  
           contains about 12 to about 20 weight percent of cationic monomer units.

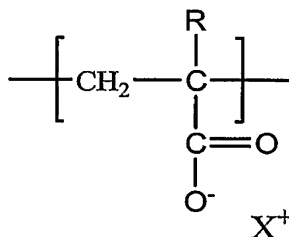
29. The bimodal polymer composition of Claim 1 wherein the second polymer has a molecular weight ranging from about 1,000 to about 100,000 daltons.
30. The bimodal polymer composition of Claim 1 wherein the first polymer has a molecular weight ranging from about 2,000 to about 1,000,000 daltons.
- 5 31. The bimodal polymer composition of Claim 1 wherein the first polymer includes a monomer unit with anionic functionality selected from the group consisting of acidic acrylate monomer; acidic methacrylate monomer; 2-sulfoethylmethacrylate and salts thereof; 2-acrylamido-2-methyl propanesulfonate and salts thereof; crotonic acid; itaconic acid, fumaric acid; 10 acid anhydrides; and half esters of di-carboxylate monomer.
32. The bimodal polymer composition of Claim 1 wherein the first polymer includes about 10 to about 90 weight percent monomer unit with anionic functionality.
- 15 33. The bimodal polymer composition of Claim 1 wherein the first polymer includes a water insoluble monomer unit.
34. The bimodal polymer composition of Claim 33 wherein the first polymer includes about 10 to about 90 weight percent water insoluble monomer unit.
- 20 35. The bimodal polymer composition of Claim 33 wherein the water insoluble monomer unit is selected from the group consisting of: esters of acrylate, esters of methacrylate, ethers of acrylate, ethers of methacrylate, styrene, and alpha-methyl styrene.
- 25 36. The bimodal polymer composition of Claim 1 wherein the first polymer includes a water soluble monomer unit selected from the group consisting of:

hydroxy functional acrylates, hydroxy functional methacrylates, and alkoxylated adducts thereof.

37. The bimodal polymer composition of Claim 36 wherein the first polymer  
5 includes to up about 80 weight percent of the water soluble monomer unit.
38. The bimodal polymer composition of Claim 1 wherein the first polymer  
includes a cross-linking or multifunctional monomer unit.
39. The bimodal polymer composition of Claim 38 wherein the first polymer  
10 includes up to about 10 weight percent cross-linking or multifunctional  
monomer unit.
40. The bimodal polymer composition of Claim 38 wherein the cross-linking or  
multifunctional monomer unit is selected from the group consisting of  
multifunctional acrylates, multifunctional methacrylates and diallyl phthalate.
- 15 41. The bimodal polymer composition of Claim 1 wherein the first polymer  
includes a chain modifier.
42. The bimodal polymer composition of Claim 41 wherein the chain modifier is  
an alcohol or a mercaptan.
43. The bimodal polymer composition of Claim 1 wherein the first polymer is  
20 present in a concentration of about 10 to about 90 weight percent.
44. The bimodal polymer composition of Claim 1 wherein the second polymer is  
present in a concentration of about 10 to about 90 weight percent.
45. The bimodal polymer composition of Claim 1 wherein the glass transition  
25 temperature ( $T_g$ ) of the composition is less than about 40°C.

46. The bimodal polymer composition of Claim 45 wherein the glass transition temperature of the composition is less than about 30°C.
47. The bimodal polymer composition of Claim 1 containing less than about 40 weight percent of a hydroxyl-containing monomer.
- 5 48. The bimodal polymer composition of Claim 47 containing less than about 30 weight percent of a hydroxyl-containing monomer.
49. The bimodal polymer composition of Claim 1 containing at least about 10 weight percent of monomer units with anionic functionality.
- 10 50. The bimodal polymer composition of Claim 49 containing at least about 20 weight percent of monomer units with anionic functionality.
51. The bimodal polymer composition of Claim 1 containing at least about 10 weight percent of monomer units with cationic functionality.
52. The bimodal polymer composition of Claim 51 containing at least about 20 weight percent of monomer units with cationic functionality.
- 15 53. A personal care fixative containing the bimodal polymer composition of Claim 1.
54. The personal care fixative of Claim 53 further including one or more volatile solvents.
- 20 55. The personal care fixative of Claim 54 having a total volatile solvent concentration ranging from about 30 to about 95 weight percent.
56. The personal care fixative of Claim 53 further including a neutralizing agent.

57. The personal care fixative of Claim 53 further including an alcohol.
58. The personal care fixative of Claim 53 further including at least one component selected from the group consisting of thickening agents, dispersing agents, emulsifiers, emollients, stabilizers, surfactants, fragrances, preservatives, proteins, conditioners, colorants, dyes, plasticizers, neutralizers, glossifiers and propellants.
59. A method for fixing a keratin-type structure, comprising the step of applying the personal care fixative of Claim 53 to the keratin-type structure.
60. The method of Claim 59 wherein the keratin-type structure includes hair.
61. The method of Claim 60 wherein the keratin-type structure includes skin.
62. A method for forming a bimodal polymer composition, comprising the step of polymerizing monomers to form a first polymer with cationic character in the presence of a second polymer with anionic character.
63. The method of Claim 62 wherein the second polymer includes the following carboxylate salt monomer unit:

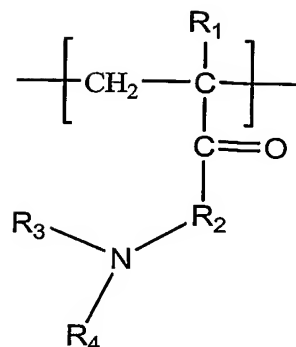


wherein R is hydrogen or an alkyl group and X<sup>+</sup> is a salt-forming cation.



64. The method of Claim 63 wherein R is hydrogen.
65. The method of Claim 63 wherein the second polymer is dispersed in an aqueous medium.
- 5 66. The method of Claim 65 wherein the aqueous medium includes at least one compound selected from the group consisting of: salts of alkylpolyethoxyethanol sulfosuccinate, salts of lauryl sulfate and salts of laurylpolyethoxyethanol.
- 10 67. The method of Claim 65 wherein the concentration of the second polymer in the aqueous medium is about 10 to about 40 weight percent.
68. The method of Claim 67 wherein the concentration of the second polymer in the aqueous medium is about 20 to about 30 weight percent.
69. The method of Claim 68 wherein the concentration of the second polymer in the aqueous medium is about 24 to about 25 weight percent.
- 15 70. The method of Claim 62 wherein emulsion polymerization is used to polymerize monomers to form the first polymer in the presence of the second polymer.
- 20 71. A method for forming a bimodal polymer composition, comprising the step of polymerizing monomers to form a first polymer with anionic character in the presence of a second polymer with cationic character.
72. The method of Claim 71 wherein the second polymer includes the following cationic monomer unit:

-36-

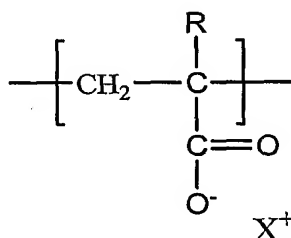


or a quaternized adduct thereof,

wherein R<sub>1</sub>, R<sub>3</sub> and R<sub>4</sub> are, independently, hydrogen or an alkyl group and R<sub>2</sub> is an alkyl group.

- 5    73.    The method of Claim 72 wherein the cationic monomer unit includes diethyl amino ethyl methacrylate or a quaternized adduct thereof.
74.    The method of Claim 71 wherein the second polymer is dispersed in an aqueous medium.
75.    The method of Claim 74 wherein the aqueous medium includes at least one  
10    compound selected from the group consisting of: salts of  
alkylpolyethoxyethanol sulfosuccinate, salts of lauryl sulfate and salts of  
laurylpolyethoxyethanol.
76.    The method of Claim 74 wherein the concentration of the second polymer in  
the aqueous medium is about 10 to about 40 weight percent.
- 15    77.    The method of Claim 76 wherein the concentration of the second polymer in  
the aqueous medium is about 20 to about 30 weight percent.

78. The method of Claim 77 wherein the concentration of the second polymer in the aqueous medium is about 24 to about 25 weight percent.
79. The method of Claim 71 wherein emulsion polymerization is used to polymerize monomers to form the first polymer in the presence of the second polymer.
80. A method for forming a bimodal polymer composition, comprising the step of polymerizing monomers to form a first polymer with cationic character in the presence of a second polymer with anionic character wherein the first polymer is formed from a monomer composition including about 35 to about 45 weight percent ammonium derivative monomer, about 15 to about 30 weight percent water insoluble monomer, and about 5 to about 15 weight percent water soluble monomer.
81. The method of Claim 80 wherein the second polymer includes the following carboxylate salt monomer unit:



wherein R is hydrogen or an alkyl group and X<sup>+</sup> is a salt-forming cation.

82. The method of Claim 81 wherein the second polymer is dispersed in an aqueous medium.

83. The method of Claim 82 wherein the aqueous medium includes at least one compound selected from the group consisting of: salts of alkylpolyethoxyethanol sulfosuccinate, salts of lauryl sulfate and salts of laurylpolyethoxyethanol.
- 5 84. The method of Claim 82 wherein the concentration of the second polymer in the aqueous medium is about 24 to about 25 weight percent.
85. The method of Claim 80 wherein the weight ratio of the first polymer to the second polymer is about 0.1 to about 2.
- 10 86. The method of Claim 85 wherein the weight ratio of the first polymer to the second polymer is about 0.5 to about 1.5.
87. The method of Claim 85 wherein the weight ratio of the first polymer to the second polymer is about 0.1 to about 0.3.
88. The method of Claim 87 wherein the weight ratio of the first polymer to the  
15 second polymer is about 0.15 to about 0.25.
89. A bimodal polymer composition formed by the method of Claim 80.